UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,148	07/10/2003	Bruce Gregory Warren	491442011620	1394

42178	7590	05/03/2006	EXAMINER

EMULEX DESIGN & MANUFACTURING CORPORATION
C/O MORRISON & FOERSTER LLP
555 WEST FIFTH STREET, SUITE 3500
LOS ANGELES, CA 90013

MEW, KEVIN D

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/617,148	WARREN ET AL.
	Examiner	Art Unit	
	Kevin Mew	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 February 2006</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 and 3-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1, 3-7</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Detailed Action

Response to Amendment

1.   Applicant's Remarks/Arguments filed on 2/7/2006 regarding claims 1, 3-7 have been

considered. Claims 1, 3-7 are currently pending and claim 2 has been canceled by applicant.

Claim Objections

2.   Claim 6 is objected to because of the following informalities:

The "second Arbitrated Loop device" in lines 1-2 of the claim should be amended to "the

first Arbitrated Loop device." Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign
country or in public use or on sale in this country, more than one year prior to the date of
application for patent in the United States.

3.   Claims 1, 3-4, 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by the

admitted prior art, Berman (USP 6,118,776).

Regarding claim 1, Berman discloses a Fibre Channel Arbitrated Loop interconnect

system (**Fiber Channel Fabric**, Fig. 14) comprising:

a first port (**port control module PCM 451**, col. 11, lines 30-58, col. 14, lines 4-14 and

element 451, Fig. 14),

a second port (**brouter module or another PCM module**, col. 11, lines 30-58 and

element 455, Fig. 14),

said first and second ports including port logic to monitor Open (OPN) arbitrated loop

primitives (**port control modules PCM include port logic to monitor arbitrated loop**

primitives, col. 20, lines, 27-59),

a crossbar switch coupled to said first and second ports (**NxN matrix switch core**, col.

13, lines 63-65 and element 453, Fig. 14),

a route determination apparatus (**a router**, element 452, Fig. 14) including a routing table

(**router includes an address match table**, col. 13, lines 26-50 and element 531, Fig. 16)

comprised of Arbitrated Loop Physical Addresses (ALPAs) (**address match table comprises**

24-bit addresses, col. 13, lines 26-50), the route determination apparatus separate from the ports

and directly coupled to each port (**the router is directly coupled to each port**, Fig. 14) and the

crossbar switch (**the router is separate from the port controls 451 and 474**, Fig. 14) through

signaling paths (**via signaling paths 459, 460, 461, 462**, col. 14, lines 4-14 and Fig. 14), the

route determination apparatus for programming the crossbar switch (**router programs the**

switch core to connect routes, col. 12, lines 13-26) to establish direct paths between the ports in

the crossbar switch (**the fabric routes frames from PCM module 451 to Brouter module 455**,

col. 11, lines 30-58),

wherein the crossbar switch creates the direct paths between the ports (**the fabric routes**

frames from PCM module 451 to Brouter module 455 or another PCM module, col. 11,

lines 30-58) based on the OPN arbitrated loop primitives (**based on the OPN primitives such as**

OPNs, col. 20, lines 40-55), and

wherein priority for each port is independent of the ALPAs (**the port with the highest**

priority will be used which is independent of the addresses, col. 13, lines 18-25).

Regarding claim 3, Berman discloses a system for interconnecting Fibre

Channel Arbitrated Loop devices (**a fiber channel private loop device interconnect system**,

col. 5, lines 22-29) comprising:

a first Arbitrated Loop containing one or more Fibre Channel arbitrated loop devices (**a**

first arbitrated loop containing one or more private loop devices, col. 3, lines 3-13),

a second Arbitrated Loop Device (**a second arbitrated loop containing one or more**

private loop devices, col. 3, lines 3-13),

a Fibre Channel Arbitrated Loop interconnect system (**a fiber channel private loop**

device interconnect system, col. 3, lines 3-13), the interconnect system including:

a first port containing port logic coupled to the first Arbitrated Loop (**port control**

module PCM 451 contains port logic, col. 11, lines 30-58, col. 14, lines 4-14 and element 451,

Fig. 14),

a second port containing port logic coupled to the second Arbitrated Loop (**brouter**

module or another PCM module contains port logic, col. 11, lines 30-58 and element 455,

Fig. 14),

the first and second ports adapted to connect to devices supporting a Fibre Channel

Arbitrated Loop protocol (**ports supporting FC-2 protocol**, col. 11, lines 1-5);

route determination apparatus (**a router**, element 452, Fig. 14) separate from the plurality

of ports (**the router is separate from the port controls 451 and 474**, Fig. 14) and directly

coupled to each of the plurality of ports (**the router is directly coupled to each of the ports,**

Fig. 14) through separate signaling paths for selecting a direct route between the first and second

ports (**via separate signaling paths 459, 460, 461, 462**, col. 14, lines 4-14 and Fig. 14), based

on received Fibre Channel Arbitrated Loop primitives from the ports (**based on the OPN**

primitives such as OPNs, col. 20, lines 40-55), the direct route excluding all other ports (**the**

path between a PCM module and brouter module or another PCM module is excluding

other ports, Fig. 14), and including a routing table (**router includes an address match table,**

col. 13, lines 26-50 and element 531, Fig. 16) comprised of Arbitrated Loop Physical Addresses

(ALPAs) (**address match table comprises 24-bit addresses**, col. 13, lines 26-50)

a crossbar switch directly coupled to the first and second ports and to the route

determination apparatus (**NxN matrix switch core directly coupled to port control modules**

and brouter module, col. 13, lines 63-65 and element 453, Fig. 14) through separate signaling

paths (**via separate signaling paths 476, 457, 458,** Fig. 14) for switching frames between ports

under control of the route determination apparatus (**the router is to connect the frame route**

between the ports, col. 12, lines 13-26), wherein Fibre Channel frames are transferred between

a device on the first Arbitrated Loop and the second Arbitrated Loop Device(**the fabric switches**

frames from PCM module 451 to Brouter module 455, col. 11, lines 30-58), and

wherein priority for each port is independent of the ALPAs (**the port with the highest**

priority will be used which is independent of the addresses, col. 13, lines 18-25).

Regarding claim 4, Berman also discloses the interconnect system of claim 3 wherein the

Arbitrated Loop primitives that cause the crossbar switch to create paths between ports includes

one or more of the following: Arbitrate (ARB), Open (OPN) and Close CLS (**OPN primitives includes one of ARBs, OPNs, and Closes**, col. 20, lines 41-46).

Regarding claim 6, Berman discloses the interconnect system of claim 3 wherein the first Arbitrated Loop device is on the first port (**loop device connected to fiber media is on port control module 451**, Fig. 14).

Regarding claim 7, Berman discloses the interconnect system of claim 3 wherein the second Arbitrated Loop device is on the second port (**loop device connected to bridged network is on brouter module 455**, Fig. 14)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berman in view of Coffey (US Publication 2002/0044561).

Regarding claim 5, Berman discloses all the aspects of the claimed invention set forth in the rejection of claim 3 above, except fails to explicitly show the interconnect system of claim 3 including a R_RDY counter to count R_RDY'S sent by the originating Fibre Channel Arbitrated

Loop device before the OPN response is received by the originating Fibre Channel Arbitrated

Loop Device.

However, Coffey discloses a R_RDY primitive indicates that an interface buffer is

available for receiving frames continuously until something causes the current state to change

(see paragraph 0055, lines 15-20). Coffery further discloses is the OPN primitive is used for

opening the connection between the transmitter port and the receiver port (see entire paragraph

0068). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the fiber channel arbitration method and apparatus of Berman

with the teaching of Coffey in using the R_RDY primitive such that the value of the R_RDY

primitive will be used in the event that the receiver is ready to receive data frames before the

originator will receive any opening connection response from the receiver. The motivation to do

so is to avoid consuming resources to open connection between two ports unnecessary when the

receiver is not yet ready to receive further data frames from the originator.

Response to Arguments

5.   Applicant's arguments filed on 2/7/2006 have been fully considered but they are not moot

in view of a new ground of rejection.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The
examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
applications is available through Private PAIR only. For more information about the PAIR
system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR
system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seema S. Rao
SEEMA S. RAO 5/11/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Kevin Mew *KM*
Work Group 2616